

Fig. 1

Film of germanium sulphide deposited on a calcium fluoride substrate,
showing topview (left) and cleaved edge (right)

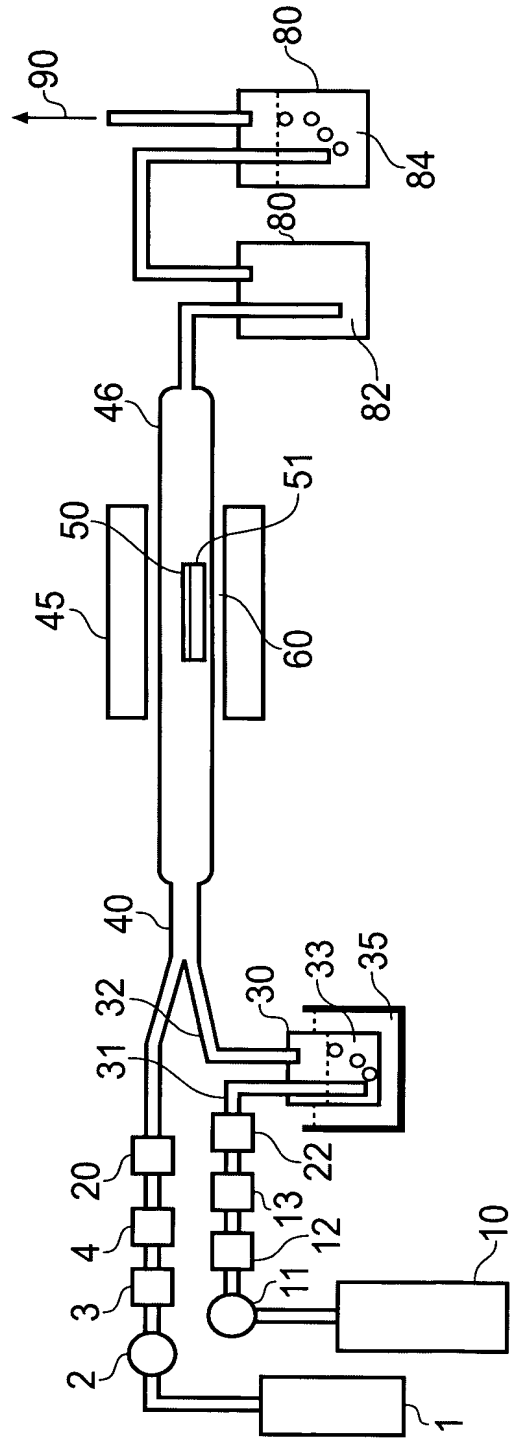


Fig. 2

3/19

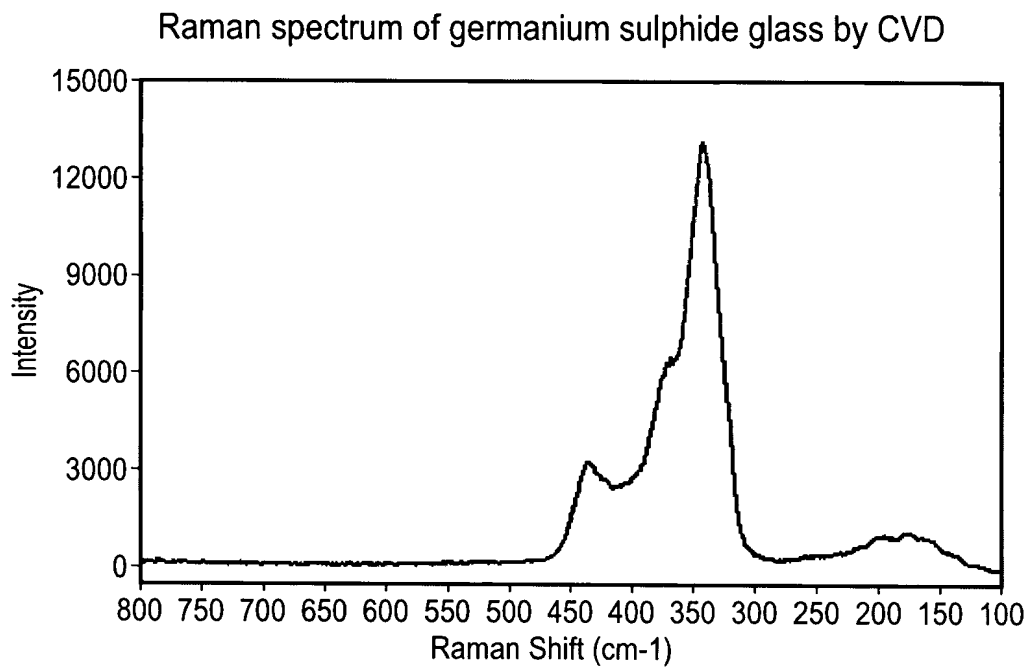


Fig. 3

Shows the typical Raman spectrum of germanium sulphide glass thin film by chemical vapour deposition (CVD)

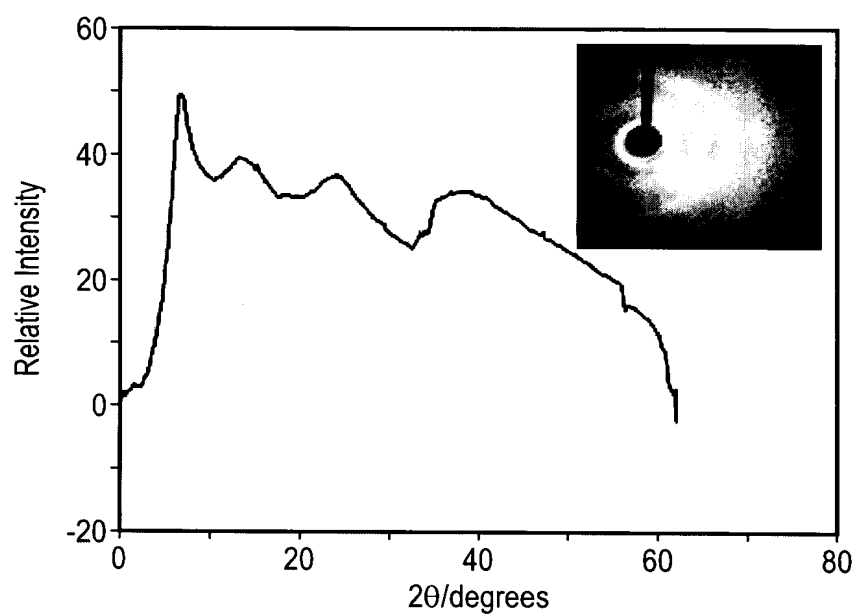


Fig. 4

Shows the typical X-ray diffraction (XRD) pattern of germanium sulphide glass thin film by chemical vapour deposition (CVD)

5/19

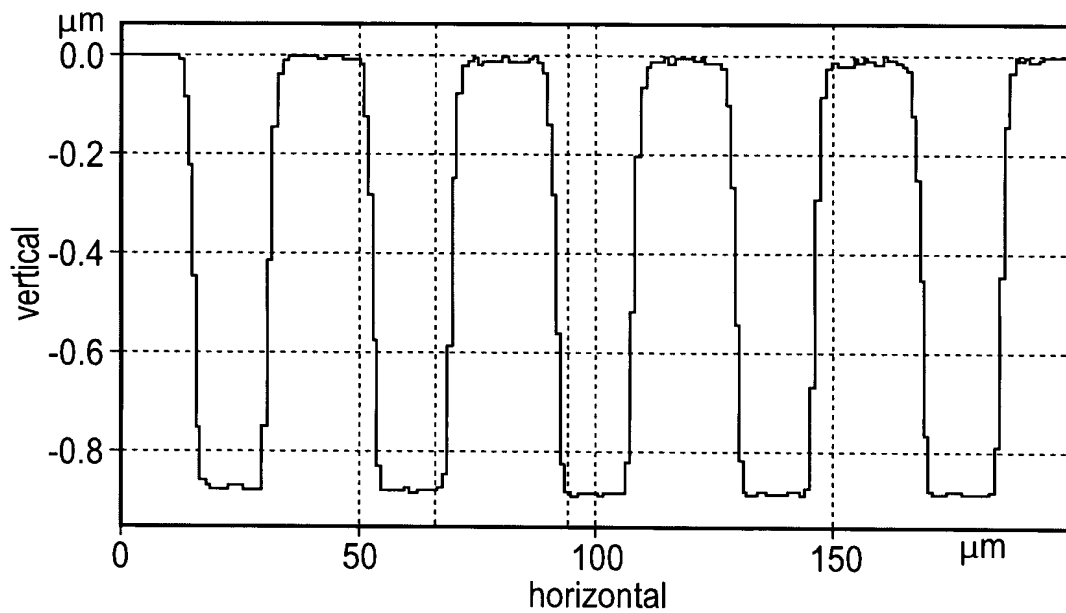


Fig. 5

Shows the Alpha-step profile of rib structures of germanium sulphide glass waveguide by photolithography and Ar ion-beam milling

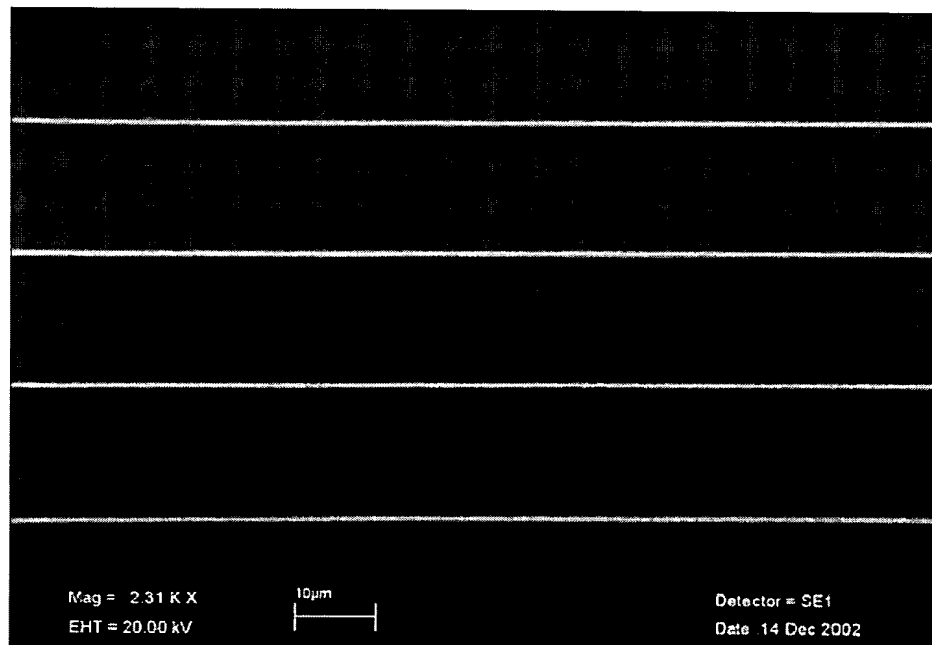
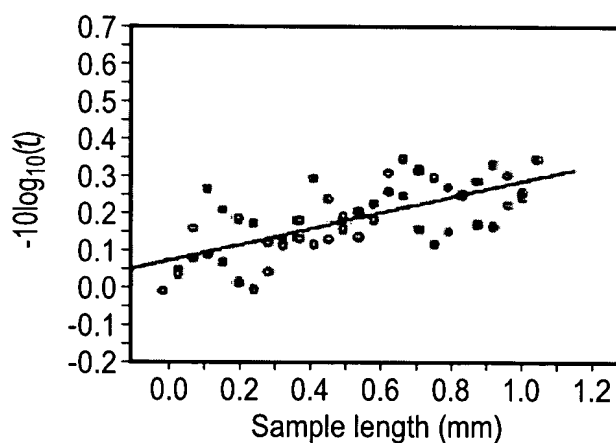
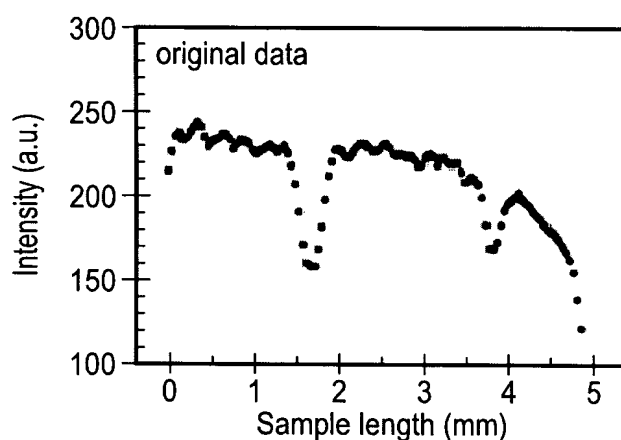
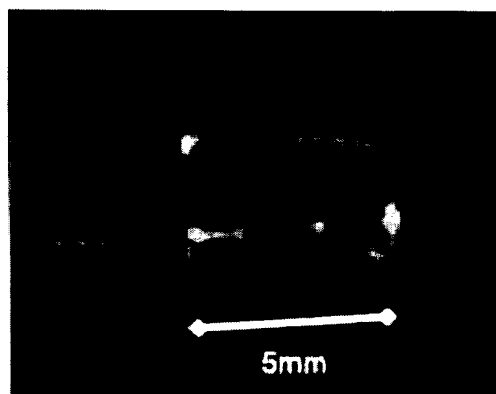


Fig. 6

Shows the SEM picture of rib structures of a germanium sulphide glass waveguide fabricated by photolithography and Ar ion-beam milling

Best Available Copy

6/19



CVD R21S3 GeS_x glass waveguide loss measurement

Fig. 7

Illustrates the guiding of light by the rib structures formed from germanium sulphide glass thin films by photolithography and etching and the experimental analysis used to assess the optical waveguide transmission loss

Best Available Copy

7/19

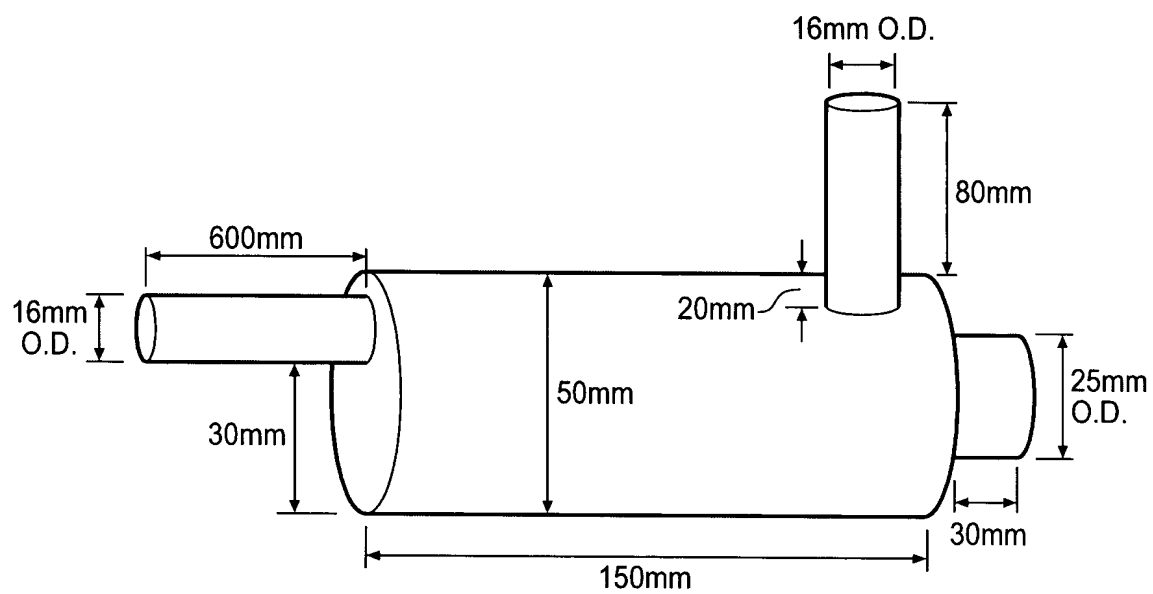


Fig. 8
Bulk Glass Deposition Apparatus

8/19

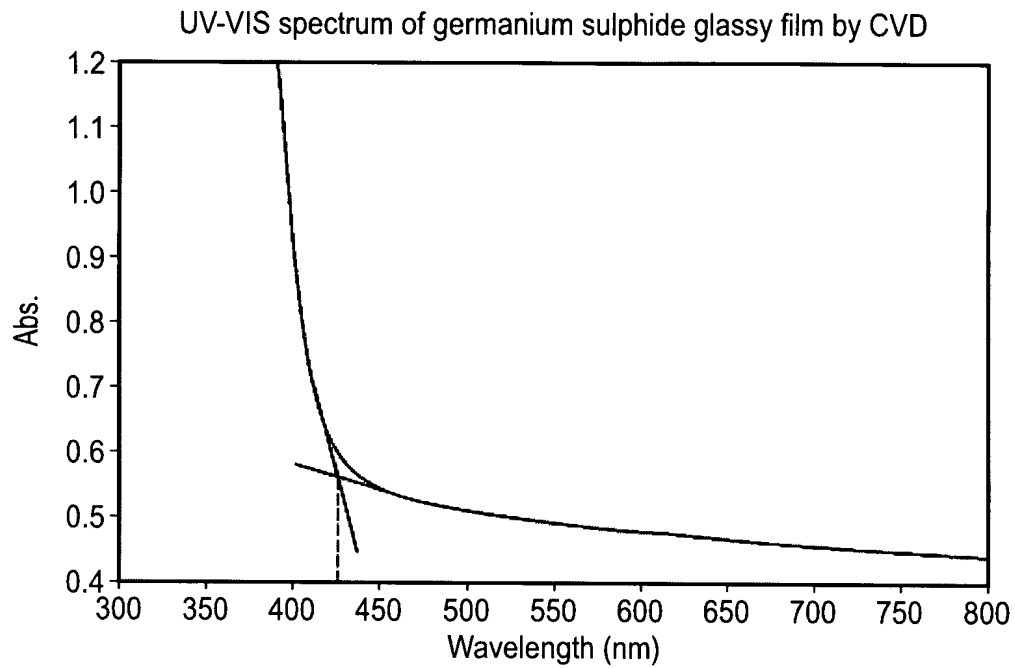


Fig. 9

Shows the typical UV-VIS spectrum of germanium sulphide glass by CVD

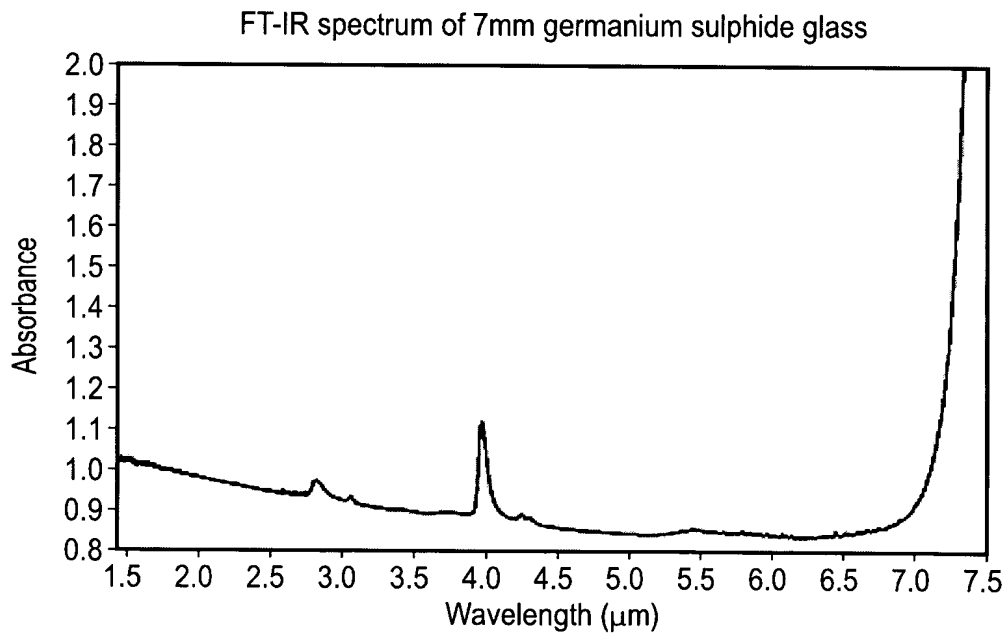


Fig. 10A

Infrared transmission spectrum of a bulk GeS_x glass sample

9/19

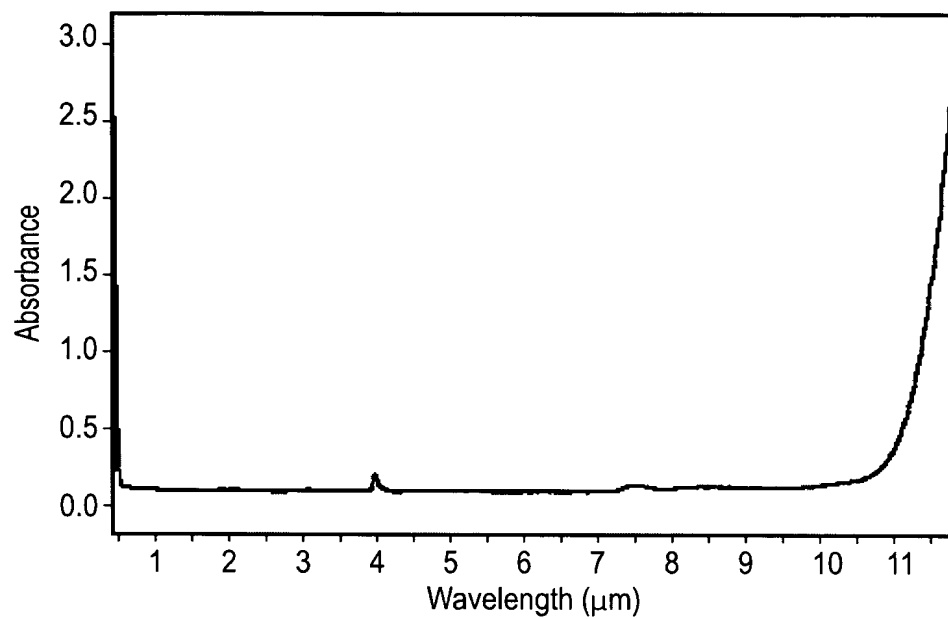


Fig. 10B

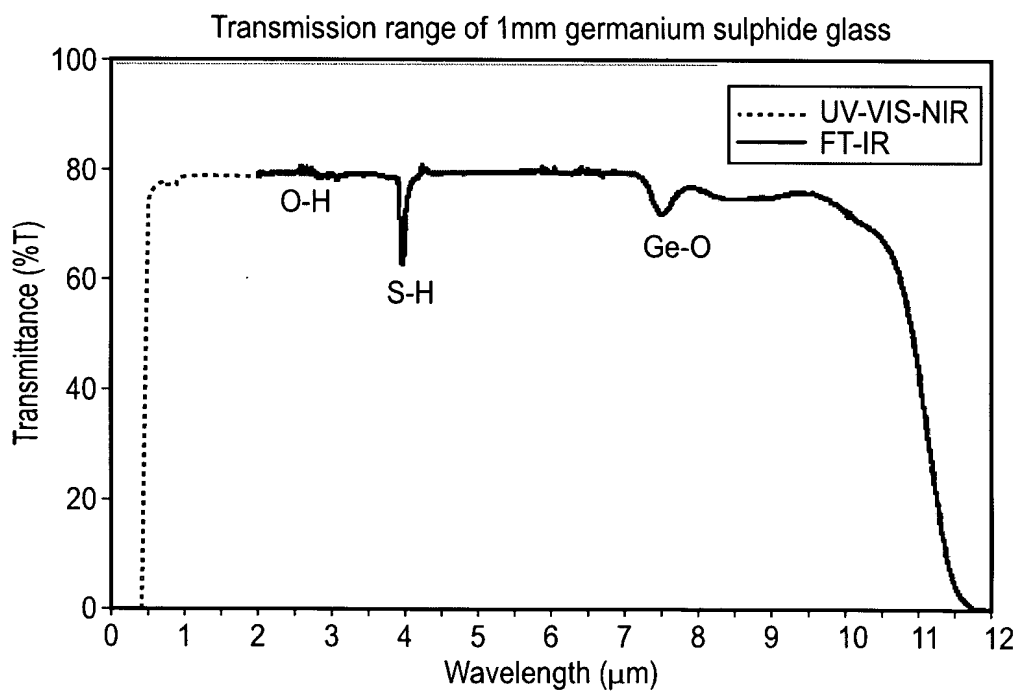


Fig. 10C

10/19

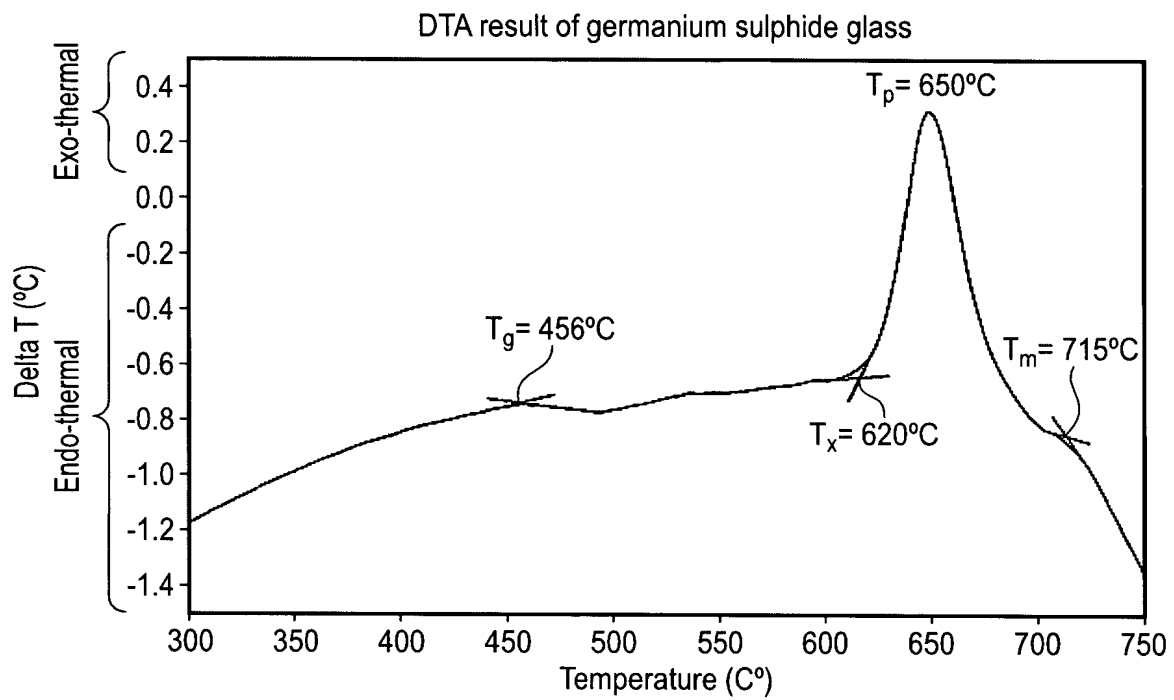


Fig. 11

Shows the thermal properties of germanium sulphide glass by DTA analysis

11/19

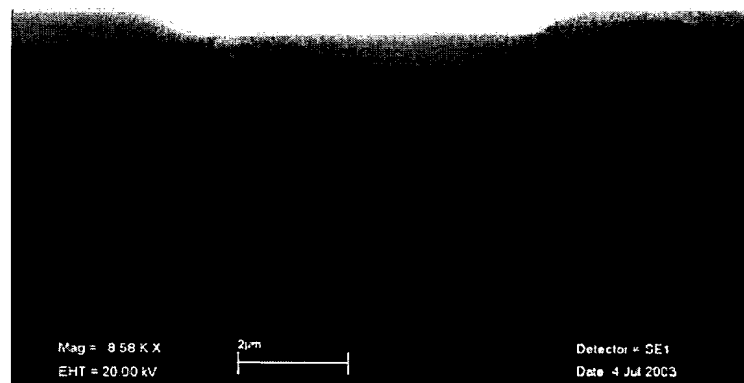
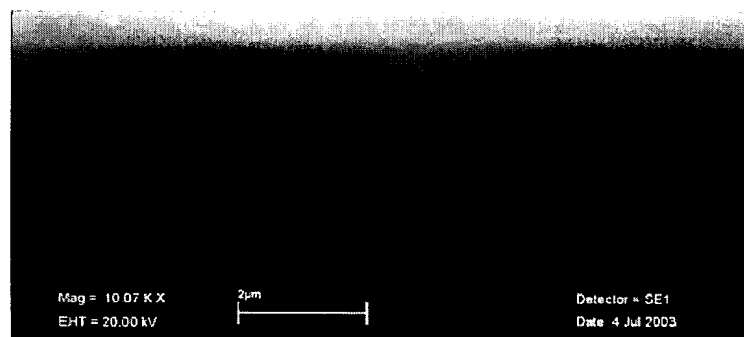
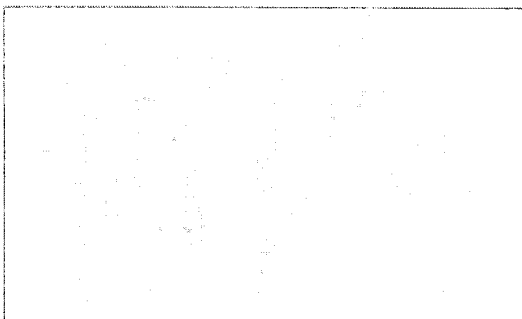


Fig. 12
Demonstration of conformal coatings on a structured substrate

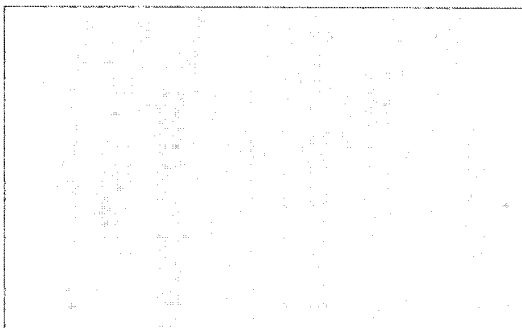
Best Available Copy

12/19

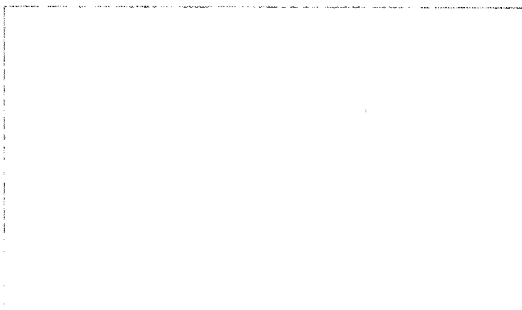
GeS_x on CaF₂



GeS_x on N-PSK58



GeS_x on Sapphire



GeS_x on Silicate

Fig. 13

Demonstration of deposition on a variety of substrate materials

Best Available Copy

13/19

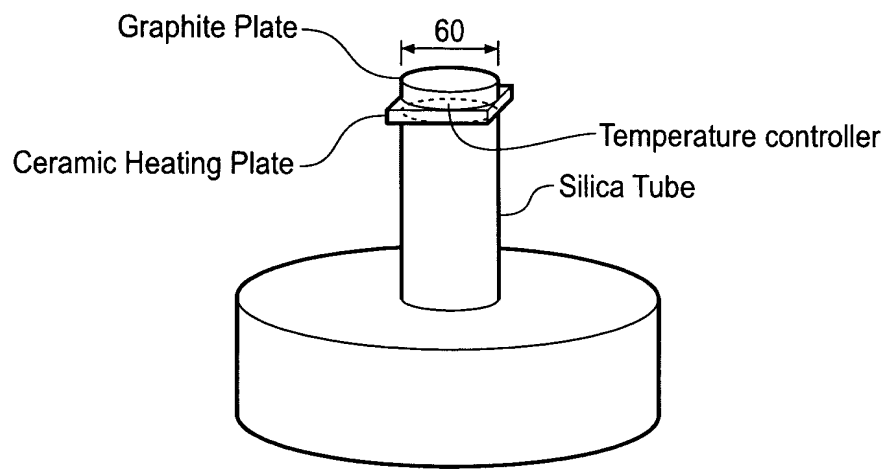


Fig. 14

Direct heating of substrate in a cold wall reactor

14/19

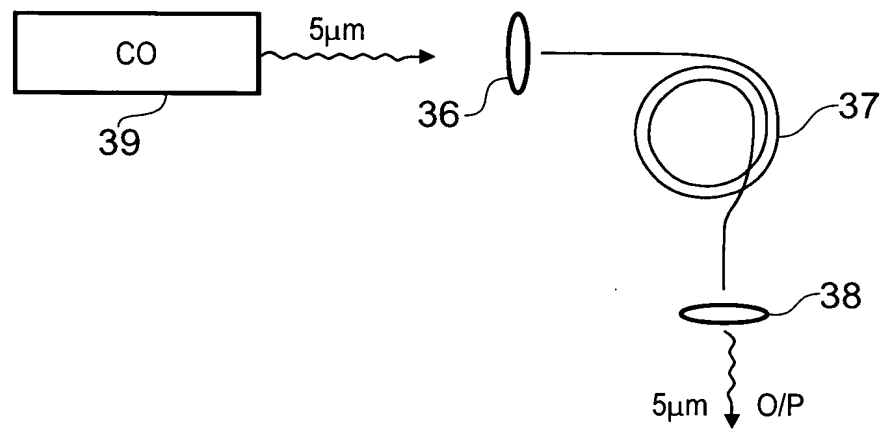


Fig. 15

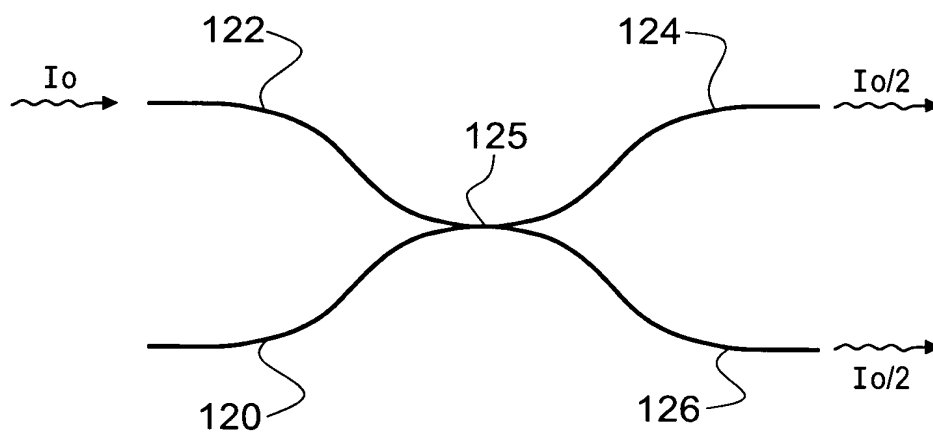


Fig. 16

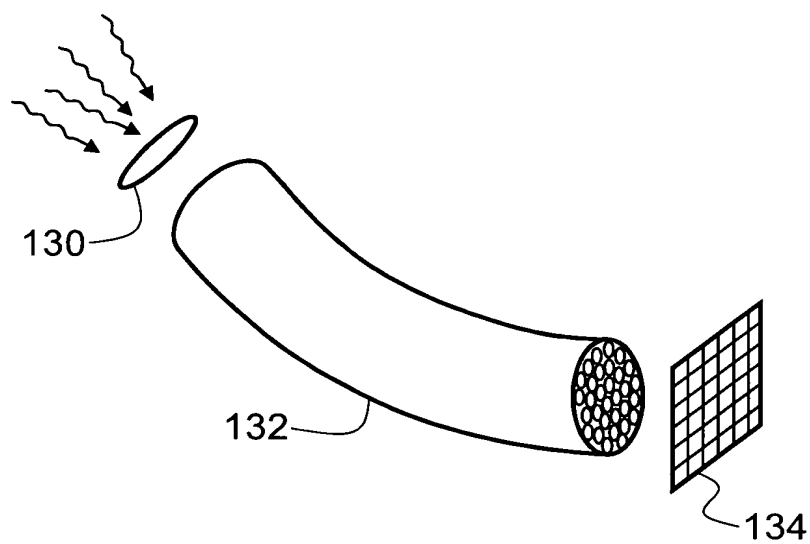


Fig. 17

16/19

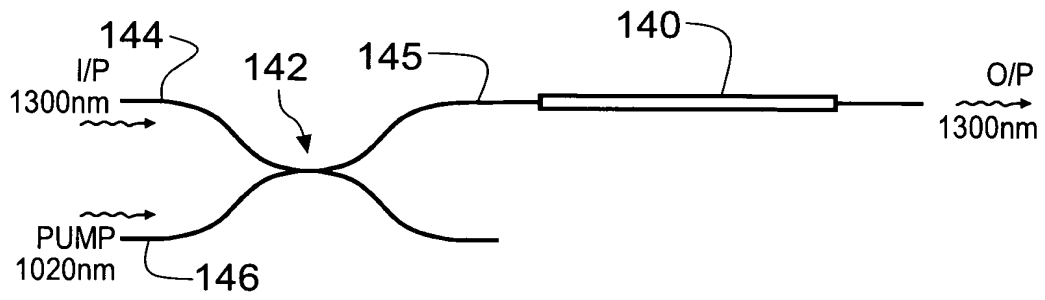


Fig. 18

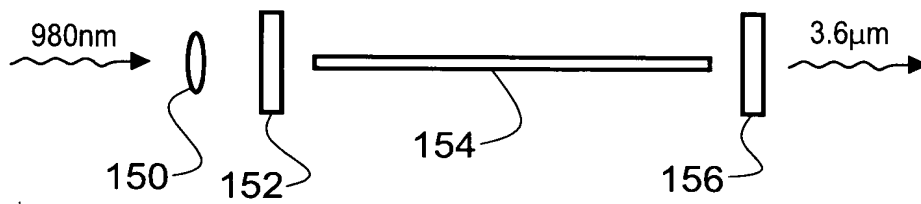


Fig. 19

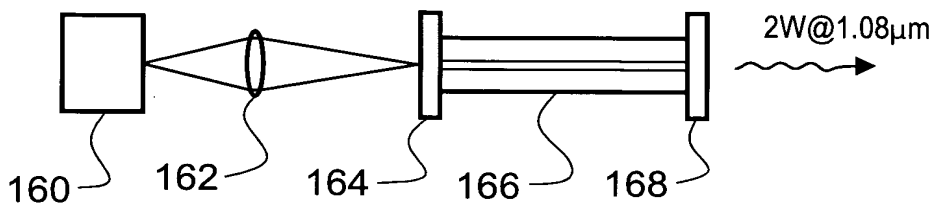


Fig. 20

17/19

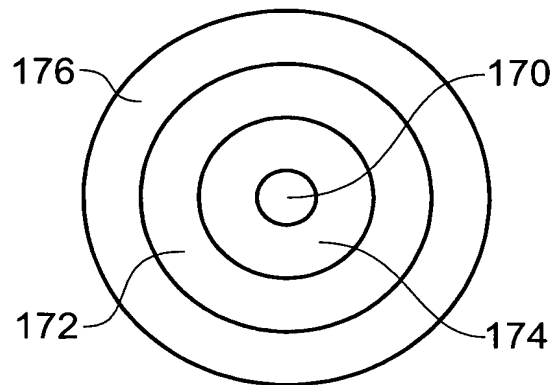


Fig. 21

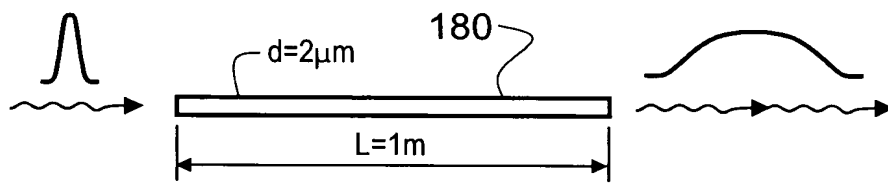


Fig. 22

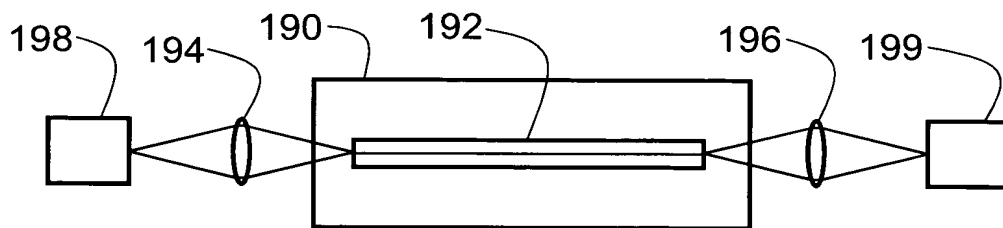


Fig. 23

18/19

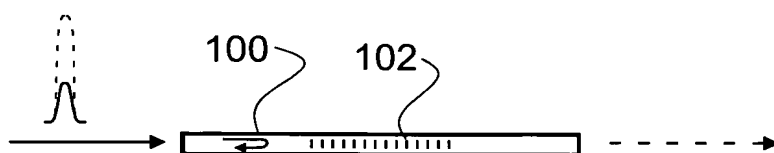


Fig. 24

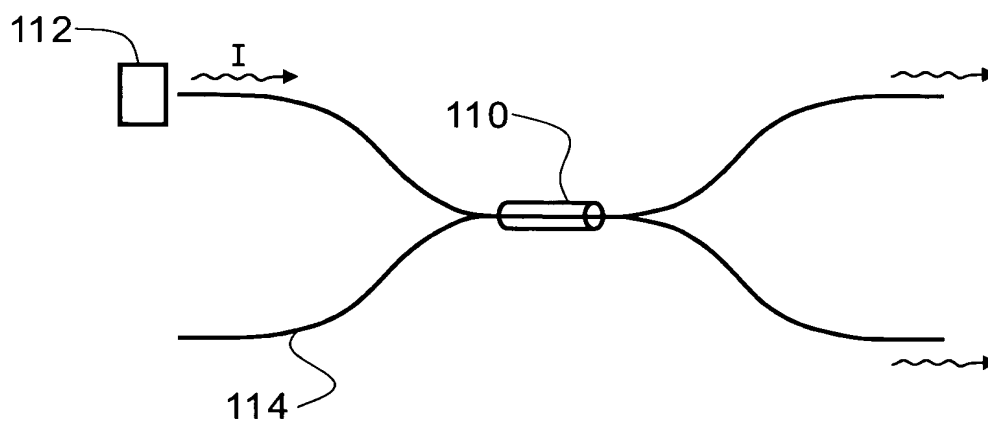


Fig. 25

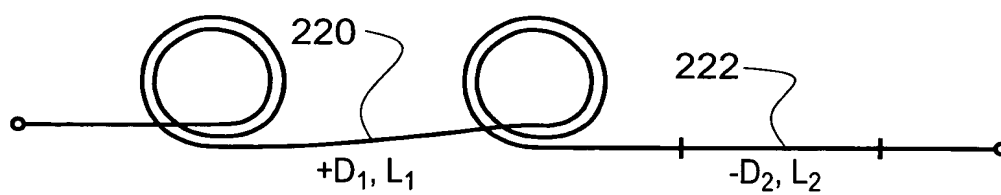


Fig. 26

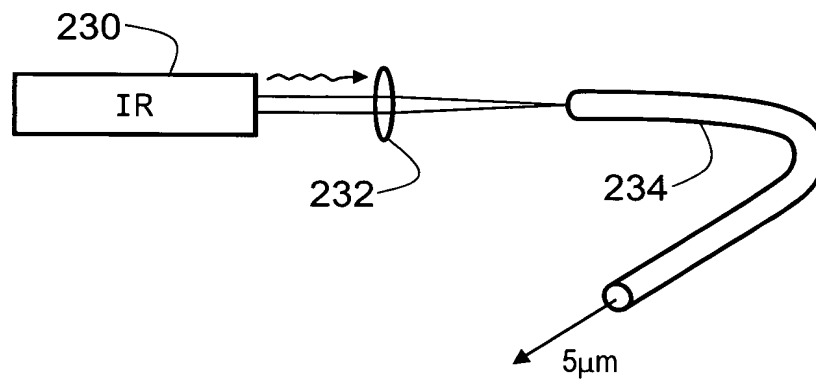


Fig. 27